

Application No.: 10/004706

Case No.: 56949US002

REMARKS**A. Preliminary Remarks Regarding Certain Claim Amendments**

While reviewing the claims in consideration of the Office action, Applicants noticed that claims 16 and 17, as originally presented, failed to specify that the organic layer associated with the receptor substrate was an organic charge transfer layer as described in independent claims 1 and 12. Accordingly, Applicants have amended claims 16 and 17 to clarify this inadvertent omission and to delete the several subsequent and unnecessary references to this layer being "organic."

These amendments have not been made for reasons related to patentability but rather to correct an unintentional drafting error as apparently recognized by the Examiner in light of the remarks concerning claims 18 to 20.

B. Rejections Under 35 USC § 112

The Examiner rejected claims 4 and 18-20 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. These rejections are respectfully traversed.

Applicants have amended claim 4 to delete the word "polymeric." The previously described amendments to claim 17 render the Examiner's rejection of claims 18-20 moot.

C. Rejection of Claims 1-15

The Examiner rejected claims 1-15 under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 6,558,219 to Burroughes et al. ("the '219 patent") in view of U.S. Patent No. 6,114,088 to Wolk et al. ("the '088 patent"), with these patents being additionally combined with U.S. Patent No. 6,580,027 to Forrest et al. to reject claims 2 and 11, and additionally combined with U.S. Patent No. 4,994,529 to Sekiguchi et al. to reject claim 9. These rejections are respectfully traversed. Since Applicants' invention may be readily distinguished from the '219 patent, further discussion of the remaining references relied upon by the Examiner is unnecessary at this time.

The '219 patent describes plasma treating layers of electroluminescent devices so as to vary the electronic/optical properties thereof. According to the '219 patent:

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The step of processing or modifying the emissive layer or, in the first aspect of the invention, the transport layer, preferably comprises exposing the emissive or transport layer to an agent that causes modification of the electronic characteristics of the layer. One possibility is that the agent could be a reactive agent, which suitably promotes a chemical reaction in the transport layer...

The reaction may suitably be an oxidation reaction or a reduction reaction (which could cause de-doping), especially in the case of the transport layer... One preferred reactive oxidising agent is an oxygen plasma. The degree of oxidation, reduction or dedoping preferably varies through the thickness of the transport layer or the emissive layer, suitably leading to the variation in the electronic/optical properties...

The emissive or transport layer suitably comprises a conjugated material. Then, the step of creating the variation in the electronic/optical property(ies) preferably comprises reducing the degree of conjugation of the conjugated material.

(Column 4, lines 4-31.)

The '219 patent also discusses a mechanism for the oxygen plasma treatment.

One possible mechanism for the effect of the oxygen plasma on the PEDOT:PSS is oxidation of the PEDOT:PSS layer, possibly by ring opening and/or production of carbonyl groups which reduce conjugation in the PEDOT and widen its band gap.... Another possible mechanism is that the oxygen plasma could de-dope the PEDOT, and thus possibly increase its work function.

(Column 9, lines 47-55.)

Thus, the '219 patent employs plasma treatments to substantially chemically modify the treated surface. Much to the contrary, Applicants' invention employs a plasma treatment to roughen a surface of a charge transfer layer, but without substantially chemically modifying the surface of the charge transfer layer other than partially oxidizing the surface. Independent claims 1, 12, 16 and 17 have been amended to refer to this characteristic of Applicants' method. (The claim amendments are supported by the originally filed application at page 5, line 24 to page 6, line 2.)

While the '219 patent refers to partial oxidization of the plasma-treated surface, this is much different than that contemplated by Applicants who indicate at page 5, line 28 - page 6, line 2 that "any oxidation of the surface is not substantially more than the oxidation that would be achieved by exposure to the environment during normal processing and storage of the receptor."

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D. Rejection of Claims 16-22

The Examiner rejected claims 16-22 by applying various references pursuant to 35 USC § 102 and 103. These rejections are traversed. Applicants have amended independent claims 16 and 17 to specify that the plasma treatment used to provide surface roughening occurs without substantially chemically modifying the plasma-treated surface other than partially oxidizing the surface. Thus, the Examiner's rejection of these claims under 35 USC § 102 has been rendered moot. The rejections under 35 USC § 103 rely upon the '219 patent which, as discussed above, is not relevant.

E. Conclusions

Applicants believe that all claims are in condition for allowance and respectfully request early and favorable reconsideration of the same. To the extent that the Examiner has any continuing questions or concerns regarding the claims, he is encouraged to directly contact Applicants' undersigned representative to discuss the same.

Respectfully submitted,

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Date

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